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09/658,424	09/08/2000	Changming Liu	09725-005001	2970

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EXAMINER
ENGLAND, DAVID E

ART UNIT	PAPER NUMBER
2143	

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _22 February 2005_.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-22_ is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-22_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _03/14/2002, 09/01/2004_ is/are: a)☐ accepted or b)☒ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All   b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
　　Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1 – 22 are presented for examination.

Drawings

2.   The drawings are objected to under 37 CFR 1.83(a). The drawings must show every

feature of the invention specified in the claims. Therefore, the "determining, when a policy is to

be applied to the traffic, if a size of the traffic exceeds a number of tokens in the first bucket, the

first bucket being associated with the policy" must be shown or the feature(s) canceled from the

claim(s). No new matter should be entered.

        Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to

the Office action to avoid abandonment of the application. Any amended replacement drawing

sheet should include all of the figures appearing on the immediate prior version of the sheet,

even if only one figure is being amended. The figure or figure number of an amended drawing

should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure

must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the

drawings for consistency. Additional replacement sheets may be necessary to show the

renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The

objection to the drawings will not be held in abeyance.

Claim Objections

3.   Claim 7 is objected to because of the following informalities: Claim 7 states, "…based

on IP address" when it would read, "…based on an IP address". Appropriate correction is

required.

4.   Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for

failing to further limit the subject matter of a previous claim. Applicant is required to cancel the

claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the

claim(s) in independent form. The limitation of "the traffic content" in claim 13 can be

interpreted as "an IP address" which is in claim 7, which claim 13 depends on.

Claim Rejections - 35 USC § 112

5.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making
> and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it
> pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode
> contemplated by the inventor of carrying out his invention.

6.   Claims 1 – 13, 15 and 20 – 22 are rejected under 35 U.S.C. 112, first paragraph, as failing

to comply with the written description requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the

claimed invention.

7.   Referencing claims 1, 14 and 15, the term "borrowing" is not specifically described in the

specification as known as the act of "borrowing". If something is "borrowed" it is understood

that it is given back to the place of origin. This is not described in the specification as to the

limitation "borrowing bandwidth from the shared bandwidth bucket by a respective guaranteed

bandwidth bucket", nor is it described how this occurs.

8.   Claims 2 – 13 are rejected for their dependency on claim 1.

9.   Referencing claim 15, the limitation of "a scheduler operable to evaluate a packet to

determine of a traffic shaping policy should be applied to a given packet", is not explained in the

specification as to how it is determined that a traffic shaping policy should be applied to a

packet, (i.e., no description of a bit or flag that would signify this determination).

10.   This is also similar to claim 20's limitation of, "determining, when a policy is to be

applied to the traffic, if a size of the traffic exceeds a number of tokens in the first bucket, the

first bucket being associated with the policy", there is no description in the specification that

teaches this limitation in regards to a size of the traffic exceeding a number of tokens in a first

bucket being a determining factor as to when a policy is to be applied to the traffic.

11.   Claims 21 and 22 are rejected for their dependency on claim 20.

12.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13.   Claims 8 – 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

14.   Claim 8 recites the limitation "the source IP address". There is insufficient antecedent basis for this limitation in the claim.

15.   Claim 9 recites the limitation "the destination IP address". There is insufficient antecedent basis for this limitation in the claim.

16.   Claim 10 recites the limitation "the protocol type". There is insufficient antecedent basis for this limitation in the claim.

17.   Claim 11 recites the limitation "the UPD/TCP port number". There is insufficient antecedent basis for this limitation in the claim.

18.   Claim 12 recites the limitation "the type of service requested". There is insufficient antecedent basis for this limitation in the claim.

19.   Claim 13 recites the limitation "the traffic content". There is insufficient antecedent basis for this limitation in the claim.

20.   Referencing claim 11, the abbreviation, "UPD/TCP", is ambiguous in meaning because there is no definition in the specification or claims as to what "UPD/TCP" stands for. It will be

interpreted by the Examiner that TCP is Transmission Control Protocol but it is uncertain if UPD

is an Applicant's invented type of port number.

Claim Rejections - 35 USC § 102

21.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

22.   Claims 1, 5, 6 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Iverson

et al. (6052379) (hereinafter Iverson).

23.   Referencing claim 1, as closely interpreted by the Examiner, Iverson teaches a method

for allocating bandwidth in a network appliance where the network appliance includes a plurality

of guaranteed bandwidth buckets used to evaluate when to pass traffic through the network

appliance, the method comprising:

24.   Providing a shared bandwidth bucket associated with a plurality of the guaranteed

bandwidth buckets, (e.g. Abstract, Fig. 10 & col. 17, line 56 – col. 18, line 19);

25.   Allocating bandwidth to the shared bandwidth bucket based on the underutilization of

bandwidth in the plurality of guaranteed bandwidth buckets, (e.g. Abstract, Fig. 10 & col. 17,

line 56 – col. 18, line 19); and

26.   Sharing excess bandwidth developed from the underutilization of the guaranteed

bandwidth allocated to the individual guaranteed bandwidth buckets including borrowing

bandwidth from the shared bandwidth bucket by a respective guaranteed bandwidth bucket to

allow traffic to pass immediately through the network appliance, (e.g. Abstract, Fig. 10 & col.

17, line 56 – col. 18, line 19).

27.   Referencing claim 5, as closely interpreted by the Examiner, Iverson teaches each

guaranteed bandwidth bucket is associated with a traffic shaping policy, (e.g. col. 17, line 56 –

col. 18, line 19, *"leaky bucket"*).

28.   Referencing claim 6, as closely interpreted by the Examiner, Iverson teaches a plurality

of guaranteed bandwidth buckets are associated with a single traffic shaping policy, (e.g. col. 17,

line 56 – col. 18, line 19, *"leaky bucket"*).

29.   Claim 14 is rejected for similar reasons as stated above.

Claim Rejections - 35 USC § 103

30.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

31.   The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

32.   Claims 2, 3, 7 – 11, 13 and 15 – 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iverson as applied to claims 1 and 5 above, and in view of Ho (6862270).

33.   As per claim 2, as closely interpreted by the Examiner, Iverson teaches a shared bandwidth bucket but does not specifically teach tokens in the bucket. Ho teaches tokens in a bucket, (e.g. col. 11, lines 30 – 44, *"token bucket"*). It would have been obvious to on of ordinary skill in the art at the time the invention was made to combine Ho with Iverson because tokens can be allocated as a set rate, example 1 token equaling 1 kilobyte, which could aid in classifying packets to a type of service or priority given, by the amount of tokens guaranteed to the packet.

34.   As per claim 3, as closely interpreted by the Examiner, Iverson teaches a guaranteed bandwidth bucket but does not specifically teach tokens in the bucket. Ho teaches tokens in a bucket, (e.g. col. 11, lines 30 – 44, *"token bucket"*). It would have been obvious to on of ordinary skill in the art at the time the invention was made to combine Ho with Iverson because of similar reasons stated above.

35.   As per claim 7, as closely interpreted by the Examiner, Iverson teaches a traffic shaping policy but does not specifically teach a policy based on IP address.

36.   Ho teaches a policy screens based on IP address, (e.g. col. 12, lines 40 – 62, *"parameters such as... IP Source Address"*). It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine Ho with Iverson because it would be more beneficial in certain situations, for example where low-priority traffic in one LAN group flow is protected form high-priority traffic in a misbehaving (not conforming to specified flow spec) flow when both flows are forwarded through the same wan group/VC.

37.   As per claim 8, as closely interpreted by the Examiner, Iverson teaches a traffic shaping policy but does not specifically teach a policy based on the source IP address.

38.   Ho teaches a policy based on the source IP address, (e.g. col. 12, lines 40 – 62, *"parameters such as... IP Source Address"*). It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine Ho with Iverson because of similar reasons stated above.

39.   As per claim 9, as closely interpreted by the Examiner, Iverson teaches a traffic shaping policy but does not specifically teach a policy based on the destination IP address.

40.   Ho teaches a policy based on the destination IP address, (e.g. col. 12, lines 40 – 62, *"parameters such as... IP Destination Address"*). It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to combine Ho with Iverson because of similar reasons stated above.

41.   As per claim 10, as closely interpreted by the Examiner, Iverson teaches a traffic shaping

policy but does not specifically teach a policy based on the protocol type.

42.   Ho teaches a policy based on the protocol type, (e.g. col. 12, lines 40 – 62, *"parameters*

such as... IP protocol"). It would have been obvious to one of ordinary skill in the art, at the

time the invention was made, to combine Ho with Iverson because of similar reasons stated

above. Furthermore, to would be more efficient for a system that processes specific data

protocols to filter the data based on protocol type before the data reaches the processor.

43.   As per claim 11, as closely interpreted by the Examiner, Iverson teaches a traffic shaping

policy but does not specifically teach a policy based on the UPD/TCP port number. Ho teaches a

policy based on the UPD/TCP port number, (e.g. col. 12, lines 40 – 62, *"parameters such as...*

TCP/UDP Destination Port Start"). It would have been obvious to one of ordinary skill in the

art, at the time the invention was made, to combine Ho with Iverson because it would be more

efficient for a system to utilize a widely use protocol that most system use than have different

protocols that a foreign network is unfamiliar with and will not be able to understand the

packet's format.

44.   As per claim 15, as closely interpreted by the Examiner, Iverson in combination with Ho

teach all that is similar above in claim 1 as applied to claim 15, Ho further teaches a scheduler

operable to

45.   evaluate a packet to determine if a traffic shaping policy should be applied to a given

packet, (e.g. col. 12, lines 15 – 40, *"QME, FCE, FSE"*),

46.   evaluate a guaranteed bandwidth bucket associated with an identified traffic shaping

policy, (e.g. col. 12, lines 15 – 40, *"QME, FCE, FSE"*), and Iverson teaches determine when the

guaranteed bandwidth bucket associated with an identified traffic shaping policy has insufficient

capacity to support a transfer of the packet through the network, (e.g. Abstract, Fig. 10 & col. 17, .

line 56 – col. 18, line 19), and

47.   borrow bandwidth from the shared bandwidth bucket by a respective guaranteed

bandwidth bucket to allow traffic to pass immediately through the network appliance, (e.g.

Abstract, Fig. 10 & col. 17, line 56 – col. 18, line 19). It would have been obvious to on of

ordinary skill in the art at the time the invention was made to combine Ho with Iverson because

of similar reasons stated above.

48.   As per claim 16, as closely interpreted by the Examiner, Iverson in combination with Ho

teach all that is similar above in claims 1 – 3, 7 – 11 and 15 as applied to claim 16.

49.   As per claim 17, as closely interpreted by the Examiner, Iverson teaches causing the

traffic to be forwarded after the transfer, (e.g. col. 17, line 56 – col. 18, line 19).

50.   As per claim 18, as closely interpreted by the Examiner, Iverson in combination with Ho

teach all that is similar above in claims 1 – 3, 7 – 11 and 15 – 17 as applied to claim 17,

furthermore, Iverson teaches determine if the second bucket includes the appropriate amount of

bandwidth, and prohibit the traffic from being forwarded when the second bucket includes less

than the appropriate amount of bandwidth, (e.g. col. 17, line 56 – col. 18, line 19). Ho teaches

that the buckets contain tokens, (e.g. col. 11, lines 30 – 44). It would have been obvious to on of

ordinary skill in the art at the time the invention was made to combine Ho with Iverson because

of similar reasons stated above.

51.   As per claim 19, as closely interpreted by the Examiner, Iverson teaches one or more

input ports configured to receive traffic from a network, each of the one or more input ports

including the first bucket, the second bucket, (e.g., col. 2, lines 64 – 67), and Ho more

specifically teaches the scheduler, (e.g. col. 12, lines 15 – 40).

52.   Claims 13 and 20 – 22 are rejected for similar reasons as stated above.

53.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iverson as applied

to claim 1 above, and in view of Applicant's admitted prior art.

54.   As per claim 4, as closely interpreted by the Examiner, Iverson does not specifically

teach the guaranteed bandwidth buckets are credit/debit buckets. Applicant's admitted prior art

suggests the use of credit/debit buckets being a modified type of token buckets, (e.g. page 2). It

would have been obvious to one of ordinary skill in the art at the time the invention was made to

combine the Applicant's admitted prior art with Iverson because using credit/debit buckets

instead token buckets give the system more versatility that token buckets cannot perform, (i.e.

credit/debit tokens bucket can be negative).

55.   Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iverson and Ho

as applied to claims 1 & 5 above, and in further view of Chiruvolu (6839321).

56.   As per claim 12, as closely interpreted by the Examiner, Iverson and Ho do not

specifically teach the traffic shaping policy screens based on the type of service requested.

57.   Chiruvolu teaches the traffic shaping policy screens based on the type of service

requested, (e.g. col. 6, lines 19 – 35). It would have been obvious to one of ordinary skill in the

art at the time the invention was made to combine Chiruvolu with the combine system of Iverson

and Ho because it would be more efficient for a system to give priority to users that has a higher

type of service as indicated by their priority bit therefore, meeting the requirements of a

guaranteed quality of service.

Response to Arguments

58.   Applicant's arguments with respect to claims 1 – 22 have been considered but are moot in

view of the new ground(s) of rejection.

Conclusion

59.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

60.   a.   Douceur et al. U.S. Patent No. 6247061 discloses Method and computer program product for scheduling network communication packets originating from different flows having unique service requirements.

61.   b.   Amaral et al. U.S. Patent No. 6088360 discloses Dynamic rate control technique for video multiplexer.

62.   c.   De Cnodder U.S. Patent No. 6868063 discloses Shaping method and related shaper.

63.   d.   Peris et al. U.S. Patent No. 5796719 discloses Traffci flow regulation to guarantee end-to-end delay in packet switched networks.

64.   e.   Milito U.S. Patent No. 5596576 discloses Systems and methods for sharing of resources.

65.   f.   Giroux et al. U.S. Patent No. 5412647 discloses Rate enforcement for frame relay networks.

66.   g.   Kokko et al. U.S. Patent No. 5790534 discloses Load control method and apparatus for CDMA cellular system having circuit and packet switched terminals.

67.   h.   Duffield et al. U.S. Patent No. 6452933 discloses Fair queuing system with adaptive bandwidth redistribution.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. England whose telephone number is 571-272-3912. The examiner can normally be reached on Mon-Thur, 7:00-5:00.
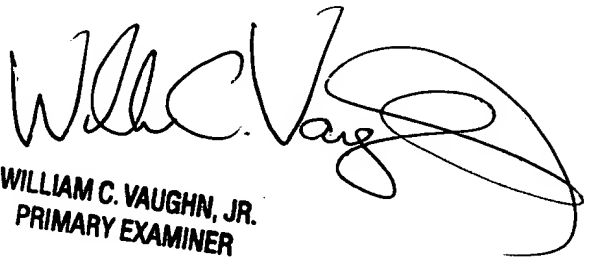
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A. Wiley can be reached on 571-272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

David E. England
Examiner
Art Unit 2143

De

WILLIAM C. VAUGHN, JR.
PRIMARY EXAMINER